Continuing Need for Sexually Transmitted Disease Clinics After the Affordable Care Act

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Objectives. We assessed the characteristics of sexually transmitted disease (STD) clinic patients, their reasons for seeking health services in STD clinics, and their access to health care in other venues.

Methods. In 2013, we surveyed persons who used publicly funded STD clinics in 21 US cities with the highest STD morbidity.

Results. Of the 4364 STD clinic patients we surveyed, 58.5% were younger than 30 years, 72.5% were non-White, and 49.9% were uninsured. They visited the clinic for STD symptoms (18.9%), STD screening (33.8%), and HIV testing (13.6%). Patients chose STD clinics because of walk-in, same-day appointments (49.5%), low cost (23.9%), and expert care (8.3%). Among STD clinic patients, 60.4% had access to another type of venue for sick care, and 58.5% had access to another type of venue for preventive care. Most insured patients (51.6%) were willing to use insurance to pay for care at the STD clinic.

Conclusions. Despite access to other health care settings, patients chose STD clinics for sexual health care because of convenient, low-cost, and expert care.

Policy Implication. STD clinics play an important role in STD prevention by offering walk-in care to uninsured patients. (*Am J Public Health.* 2015;105: S690–S695. doi:10.2105/AJPH.2015.302839)

In the United States, adolescents and young adults, persons in minority populations, and men who have sex with men are disproportionately burdened by sexually transmitted diseases (STDs).[1–4] Untreated STDs can result in serious sequelae, including infertility, ectopic pregnancy, and increased risk for transmission of and acquiring HIV. In addition, an STD diagnosis can result in concern and anxiety about the sexual aspects of a person's life, and disruption of relationships.[5] STDs result in large health care expenditures in the United States, and the direct medical cost is estimated to be approximately $16 billion annually.[6] Access to timely, quality STD diagnostic and treatment services is essential to assure the sexual and reproductive health of at-risk persons, and prevent STD and HIV transmission in the community.

STD clinics have been an important component of the US health care safety net; they provide STD testing, treatment, and partner services; risk reduction counseling; HIV testing and linkage to care for those found to be HIV-infected; and STD and HIV prevention activities for the community. In many US jurisdictions, a substantial proportion of reported HIV, primary and secondary syphilis, chlamydia, and gonorrhea cases have been diagnosed in an STD clinic.[7] These services are provided at low or no cost to patients, including those who might not have health insurance or access to other health care venues. A previous study found that patients prefer to be treated at STD clinics for many reasons, including cost, confidentiality, and the convenience of this venue with its expert STD care.[8] In recent years, STD clinics have closed in some communities because of state and local budget shortfalls.[7,9]

Recent changes in the US health care system offer opportunities to improve access to clinical services, including STD services. The Affordable Care Act (ACA) expands insurance coverage, consumer protections, and access to primary care, and emphasizes prevention in addition to care and treatment.[10] Although some STD-related services are now covered benefits with no copay or deductible as provisions of the ACA, it is anticipated that a large proportion of the US population will continue to be uninsured. The Congressional Budget Office forecasts that at least 11% of the nonelderly population will have no health insurance through 2023.[11] Therefore, STD safety net services will continue to be needed to protect the health of these uninsured persons, and of others who might choose to use care in the STD clinic despite having access to other types of health care venues.[12,13]

To help assure the provision of quality STD care in the context of a changing US health care landscape, it is important to understand the characteristics of persons who use public STD clinics, their reasons for seeking services from these clinics, and their access and use patterns for other health care services. Understanding STD clinic patients and their motivations for seeking care in STD clinics will provide information for stakeholders as they consider the future role of STD clinics as a component of the public health safety net. In this study, we surveyed persons who used STD clinics in US communities with the highest STD morbidity.

METHODS

We conducted a survey of clients who used STD clinics in the United States in 2013. We selected clinics that were located in metropolitan statistical areas (MSAs) with the highest rates of chlamydia, gonorrhea, and syphilis. Using the STD surveillance data from the Centers for Disease Control and Prevention, we ranked MSAs by the total number of reported cases of chlamydia, gonorrhea, and syphilis during 2007 to 2011.[14] Using US Census data, we also ranked the MSAs by total population in 2011.[15] Next, we summed the ordinal rankings for cases of chlamydia, gonorrhea, and syphilis, and population for each MSA. Using this composite ordinal score, the MSAs were ranked, and we selected the 24 MSAs with the lowest combined ordinal rank scores.

Clinics were eligible for inclusion if they were categorical STD clinics, defined as clinics whose main purpose was to provide STD-related services, clinics that provided STD care at least 1 day per week, and clinics that were publically funded. Most MSAs had only 1 eligible STD clinic. If multiple STD clinics in an MSA were eligible for inclusion, we selected a clinic with a large number of patients, especially female patients. Two of the 24 selected MSAs did not have a publically funded STD clinic, so we excluded them from the sample. Twenty-one of the 22 STD invited clinics participated in our survey.

From August 2013 to December 2013, we administered the survey to approximately 100 males and 100 females at each of the 21 STD clinics. A data collector approached consecutive persons in the waiting area of the STD clinic after they registered for care, invited them to take the survey, and recorded their gender as male or female. If a person agreed to participate, they were given a consent form, and the data collector obtained verbal consent for participation in the survey. Because high rates of STDs have been reported in adolescents,[1,4] they were eligible to participate in the study.

We developed a survey instrument that was based in part on previous surveys of STD clinic populations.[8] The survey was paper-based and self-administered, did not include any personal identifying information, and required approximately 5 minutes on average to complete. Both English and Spanish versions of the survey were available. Respondents completed the survey while they waited in the STD clinic waiting room for their clinical encounter. We asked respondents a total of 15 questions, including their demographic characteristics: age, gender (male, female, male-to-female, and female-to-male), race/ethnicity, sexual orientation, employment status, education, and zip code. We also queried about health care access and use: reasons for seeking health care at the STD clinic, main reasons for choosing the STD clinic for care, where care would have been sought if the STD clinic did not exist, whether other types of health care venues were used for sick or preventive care, and health insurance status and willingness to use insurance for STD care. Most questions included multiple choice responses with check boxes, but also included a space to write in other answers.

TABLE 1—Characteristics of Patients Who Used Sexually Transmitted Disease (STD) Clinics: United States, 2013

Characteristic	Total (n = 4364)		Male (n = 2263)		Female (n = 2101)		*P*
	No.	% (95% CI)	No.	% (95% CI)	No.	% (95% CI)	
Age group, y							< .001
13–14	3	0.1 (0.0, 0.15)	0	0 (0.0, 0.0)	3	0.1 (0.03, 0.4)	
15–19	313	7.2 (6.4, 7.9)	106	4.7 (3.9, 5.6)	207	9.9 (8.6, 11.2)	
20–24	1139	26.1 (24.8, 27.4)	506	22.4 (20.7, 24.1)	633	30.1 (28.2, 32.1)	
25–29	912	21.0 (19.7, 22.1)	466	20.6 (18.9, 22.3)	446	21.2 (19.5, 23.0)	
30–34	575	13.2 (12.2, 14.2)	343	15.2 (13.7, 16.7)	232	11.0 (9.7, 12.5)	
35–39	349	8.0 (7.2, 8.8)	196	8.7 (7.5, 9.9)	153	7.3 (6.2, 8.5)	
40–49	458	10.5 (9.6, 11.4)	262	11.6 (10.3, 13.0)	196	9.3 (8.1, 10.7)	
≥ 50	342	7.8 (7.1, 8.7)	235	10.4 (9.2, 11.7)	107	5.1 (4.2, 6.1)	
Missing	273	6.3 (5.6, 7.0)	149	6.6 (5.6, 7.7)	124	5.9 (4.9, 7.0)	
Race/ethnicity							< .01
Non-Hispanic White	733	16.8 (15.7, 17.9)	402	17.8 (16.2, 19.4)	331	15.7 (14.2, 17.4)	
Non-Hispanic Black	2130	48.8 (47.3, 50.3)	1048	46.3 (44.2, 48.4)	1082	57.3 (55.0, 59.5)	
Hispanic	889	20.4 (19.2, 21.6)	481	21.2 (19.6, 23.0)	408	19.4 (17.8, 21.2)	
Other	143	3.3 (2.8, 3.8)	74	3.3 (2.6, 4.1)	69	3.3 (2.6, 4.1)	
Missing	469	10.7 (9.8, 11.7)	258	11.4 (10.1, 12.8)	211	10.0 (8.8, 11.4)	
Sexual orientation							< .001
Heterosexual or straight	3187	73.3 (71.7, 74.3)	1532	67.7 (65.7, 69.6)	1655	78.8 (77.0, 80.5)	
LGBT	797	18.3 (17.1, 19.4)	535	23.6 (21.9, 25.5)	262	12.5 (11.1, 14.0)	
Missing	380	8.7 (7.9, 9.6)	196	8.7 (7.5, 9.9)	184	8.8 (7.6, 10.1)	
Education							.08
≤ some high school	571	13.1 (12.1, 14.1)	276	12.2 (10.9, 13.6)	295	14.0 (12.6, 15.6)	
High school diploma or GED	1476	33.8 (32.4, 35.3)	779	34.4 (32.5, 36.4)	697	33.2 (31.2, 35.2)	
Some college	1324	30.3 (28.9, 31.7)	666	29.4 (27.6, 31.4)	658	31.3 (29.3, 33.4)	
College degree	893	20.5 (19.3, 21.7)	488	21.6 (19.9, 23.3)	405	19.3 (17.6, 21.0)	
Missing	100	2.3 (1.8, 2.6)	54	2.4 (1.8, 3.1)	46	2.2 (1.6, 2.9)	
Employment							< .001
Full time	1308	30.0 (28.6, 31.4)	829	36.7 (34.7, 38.7)	479	22.8 (21.0, 24.7)	
Part time	843	19.3 (18.2, 20.5)	428	18.9 (17.3, 20.6)	415	19.7 (18.1, 21.5)	
Unemployed	1071	24.5 (23.3, 25.9)	510	22.4 (20.8, 24.3)	561	26.7 (24.8, 28.7)	
Student	611	14.0 (13.0, 15.1)	210	9.3 (8.1, 10.5)	401	19.1 (17.4, 20.9)	
Disabled	217	5.0 (4.4, 5.7)	118	5.2 (4.3, 6.2)	99	4.7 (3.9, 5.7)	
Other	217	5.0 (4.4, 5.7)	117	5.1 (4.3, 6.2)	100	4.8 (3.9, 5.8)	
Missing	97	2.2 (1.8, 2.6)	51	2.2 (1.6, 2.9)	46	2.2 (1.5, 2.8)	
Insurance							< .001
Private	519	11.9 (11.0, 12.9)	339	15.0 (13.5, 16.5)	180	8.6 (7.4, 9.9)	
Government[a]	812	18.6 (17.5, 19.8)	284	12.6 (11.2, 14.0)	528	25.1 (23.3, 27.0)	
Parent	441	10.1 (9.2, 11.0)	209	9.2 (8.1, 10.5)	232	11.0 (9.7, 12.5)	
Uninsured	2176	49.9 (48.4, 51.4)	1179	52.1 (50.0, 54.2)	997	47.5 (45.3, 49.6)	
Don't know	197	4.5 (3.9, 5.2)	113	5.0 (4.1, 6.0)	84	4.0 (3.2, 4.9)	
Missing	219	5.0 (4.4, 5.7)	139	6.1 (5.2, 7.2)	80	3.8 (3.0, 4.7)	

Note. CI = confidence interval; GED = general equivalency diploma; LGBT = lesbian, gay, bisexual, transgender. Percentages might not sum to 100% because of rounding. The sample size was n = 4364.
[a]Includes Medicaid and Medicare.

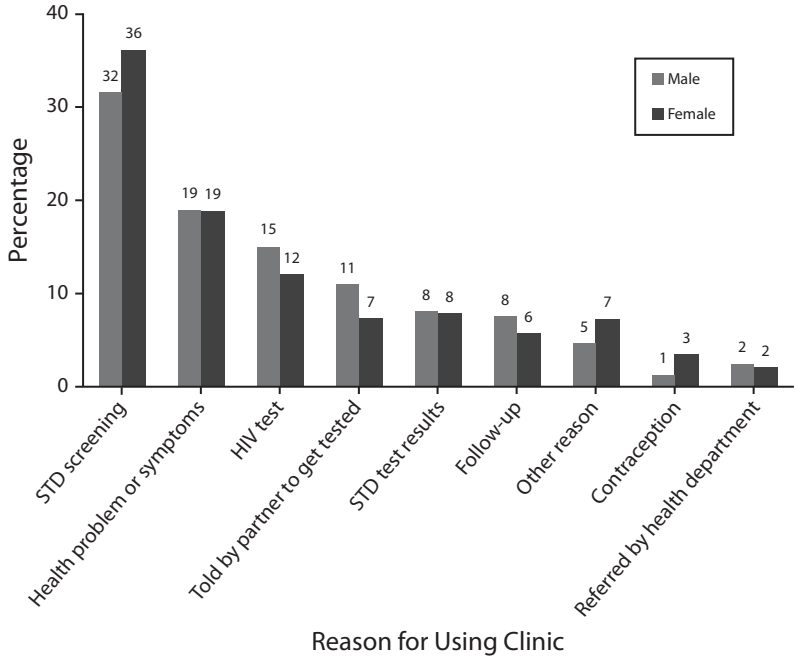

FIGURE 1—Reasons reported by males (n = 2251) and females (n = 2091) for using care in the sexually transmitted disease (STD) clinic: United States, 2013.

We entered data from the paper surveys into a database, and all data analyses were performed using SAS version 9.3 (SAS Institute, Cary, NC). We estimated the frequencies of survey responses and 95% confidence intervals, and we performed cross tabulations to compare the differences between male and female respondents. We compared survey responses using the χ^2 test, and a 2-sided P value of less than .05 was considered statistically significant.

RESULTS

Our survey had an overall response rate of 86.6%, with 4364 patients who completed the survey among 5037 patients who were approached and invited to participate. Among the 673 patients who declined to participate in the survey, 86 declined because of language barriers (i.e., they did not speak either English or Spanish). The response rate ranged from 60.8% to 97.2% at the 21 clinics. Among persons who responded to the survey, 51.8% were male, and 7.3% were younger than 20 years and 54.4% were younger than 30 years (Table 1). Most patients (72.5%) were non-White; 18.3% reported their sexual orientation as homosexual, gay, lesbian, or bisexual (23.6% of male patients and 12.5% of female patients); 24.5% were unemployed; and almost half (49.9%) were uninsured. A total of 16 persons reported they were transgender, with 12 reporting male-to-female and 4 reporting female-to-male.

The most frequently reported reasons for all patients visiting the STD clinic were a health problem or STD symptoms (18.9%), STD screening (33.8%), and HIV testing (13.6%; Figure 1). The main reasons patients chose the STD clinic for care were because of walk-in or same-day appointments (49.5%), low cost (23.9%), or availability of expert STD care (8.3%; Table 2). Among persons who were uninsured, 27.6% of males and 36.0% of females reported cost as a reason for selecting the STD clinic. In response to the question about where patients would have gone for services if the STD clinic did not exist, 9.4% of males and 11.5% of females answered that they would have waited to see how they felt and then decided what to do, and 24.4% of males and 25.8% of females would have gone to an emergency room or urgent care clinic (data not shown).

Among respondents, most had access to a usual place for sick care (56.7% of males and 64.4% of females) and for preventive care (53.3% of males and 64.0% of females; Table 3). For sick care, STD clinic patients most frequently reported using a private doctor's office or health maintenance organization (32.9%), public clinic or community health center (22.8%), or hospital emergency room (15.7%). For preventive care, responders most frequently reported using a private doctor's office or health maintenance organization (38.6%), public clinic or community health center (26.8%), or family planning clinic (8.2%). Although 1772 (40.6%) patients had

TABLE 2—Sexually Transmitted Disease (STD) Clinic Patients' Main Reasons for Selecting the STD Clinic for Health Care: United States, 2013

	Total (n = 4364)		Male (n = 2263)		Female (n = 2101)	
Reason*	No.	% (95% CI)	No.	% (95% CI)	No.	% (95% CI)
Could walk in or get same-day appointment	2161	49.5 (48.0, 51.0)	1105	48.8 (46.8, 50.9)	1056	50.3 (48.1, 52.4)
Cost	1044	23.9 (22.7, 25.2)	512	22.6 (20.9, 24.4)	532	25.3 (23.4, 27.2)
Privacy concern	326	7.5 (6.7, 8.3)	171	7.6 (6.5, 8.7)	155	7.4 (6.3, 8.6)
Expert care	362	8.3 (7.5, 9.2)	228	10.1 (8.9, 11.4)	134	6.4 (5.4, 7.5)
Embarrassed to go to usual doctor	87	2.0 (1.6, 2.5)	46	2.0 (1.5, 2.7)	41	2.0 (1.4, 2.6)
Some other reason	344	7.9 (7.1, 8.7)	180	7.9 (6.9, 9.2)	164	7.8 (6.7, 9.0)
Missing	40	0.9 (0.7, 1.3)	21	0.9 (0.6, 1.4)	19	0.9 (0.6, 1.4)

Note. CI = confidence interval. Percentages might not sum to 100% because of rounding. The sample size was n = 4364.
*$P < .001$.

TABLE 3—Sexually Transmitted Disease (STD) Clinic Patients' Access to Other Types of Health Care Venues Beside the STD Clinic by Gender: United States, 2013

Characteristic	Total (n = 4364)		Male (n = 2263)		Female (n = 2101)	
	No.	% (95% CI)	No.	% (95% CI)	No.	% (95% CI)
Usual place for sick care*	2634		1282		1352	
Hospital emergency room	413	15.7 (14.3, 17.1)	195	15.2 (13.3, 17.3)	218	16.1 (14.2, 18.2)
Urgent care clinic/walk-in clinic	186	7.1 (6.1, 8.1)	97	7.6 (6.2, 9.2)	89	6.6 (5.3, 8.0)
Private doctor's office or HMO	866	32.9 (31.1, 34.7)	437	34.1 (31.5, 36.8)	429	31.7 (29.3, 34.3)
Community health center	292	11.1 (9.9, 12.4)	144	11.2 (9.6, 13.1)	148	10.9 (9.3, 12.7)
Public clinic	308	11.7 (10.5, 13.0)	167	13.0 (11.2, 15.0)	141	10.4 (9.3, 12.7)
Family planning clinic	203	7.7 (6.7, 8.8)	54	4.2 (3.2, 5.5)	149	11.0 (9.4, 12.8)
Hospital outpatient department	72	2.7 (2.1, 3.4)	41	3.2 (2.3, 4.3)	31	2.3 (1.6, 3.2)
School-based clinic	45	1.7 (1.3, 2.2)	16	1.2 (0.7, 2.0)	29	2.1 (1.4, 3.1)
Other	156	5.9 (5.1, 6.9)	93	7.3 (5.9, 8.8)	63	4.7 (3.6, 5.9)
Missing	93	3.5 (2.9, 4.3)	38	3.0 (2.1, 4.1)	55	4.1 (3.1, 5.3)
Usual place for preventive care*	2552		1207		1345	
Hospital emergency room	206	8.1 (7.0, 9.2)	114	9.4 (7.9, 11.2)	92	6.8 (5.6, 8.3)
Urgent care clinic/walk-in clinic	142	5.6 (4.7, 6.5)	64	5.3 (4.1, 6.7)	78	5.8 (4.6, 7.2)
Private doctor's office or HMO	985	38.6 (36.7, 40.5)	478	39.6 (36.8, 42.4)	507	37.7 (35.1, 40.4)
Community health center	362	14.2 (12.9, 15.6)	164	13.6 (11.7, 15.7)	198	14.7 (12.9, 16.7)
Public clinic	322	12.6 (11.4, 14.0)	170	14.1 (12.2, 16.2)	152	11.3 (9.7, 13.1)
Family planning clinic	209	8.2 (7.2, 9.3)	51	4.2 (3.2, 5.5)	158	11.8 (10.1, 13.6)
Hospital outpatient department	79	3.1 (2.5, 3.8)	43	3.6 (2.6, 4.8)	36	2.7 (1.9, 3.7)
School-based clinic	39	1.5 (1.1, 2.1)	14	1.2 (0.6, 1.9)	25	1.9 (1.2, 2.7)
Other	119	4.5 (3.9, 5.6)	70	5.8 (4.6, 7.3)	49	3.6 (2.7, 4.8)
Missing	89	3.4 (2.8, 4.3)	39	3.2 (2.3, 4.4)	50	3.7 (2.8, 4.9)

Note. CI = confidence interval; HMO = health maintenance organization. Percentages might not sum to 100% because of rounding.
*$P < .001$.

some type of health insurance (Table 1), fewer than half of those with private insurance (38.5%) or their parent's insurance (35.4%) would be willing to use it for care at the STD clinic compared with 62.7% of those with Medicaid ($P < .001$).

DISCUSSION

STD clinics provide sexual and reproductive health care for persons in populations that are at the highest risk of STDs. We found that most STD clinic patients were young and from non-White populations, 2 groups that are disproportionately burdened with STDs.[4] In addition, a large proportion of the patients were men who self-identified as homosexual, gay, or bisexual; this is a population also at increased risk for HIV and STDs. Providing quality STD services for these populations can be challenging for several reasons. Patients might not disclose their sexual orientation, risk behavior, or other relevant information necessary to determine their health care needs. Providing appropriate health care in a primary care setting can be challenging for providers, where there are many competing health care priorities during a brief encounter.[16–19] Also, primary care providers might lack the awareness, skill, comfort, and experience providing the same quality of sexual health care that is available in a setting dedicated to sexual health such as an STD clinic.[20] In addition, the patients in our study seemed to prefer the STD clinic for their sexual health care; we found that the majority of patients had access to other types of health care venues for sick care and preventive care, yet they chose the STD clinic for their STD care.

The availability of same-day, walk-in appointments was the most frequently reported main reason for choosing the STD clinic for care. For a patient with acute onset of STD symptoms that cause pain, discomfort, and anxiety, expedient diagnosis and treatment are essential. The availability of convenient, readily available appointments is a ubiquitous feature of the STD clinic that cannot be easily implemented in many primary care venues, where appointments must be scheduled in advance of the visit and fewer walk-in slots are available. In addition, to be seen at a same-day visit, many primary care providers and clinics require that patients have previously established care with the provider, selected them as their medical home, or joined the clinic's health care network. For patients with STD symptoms or exposures, waiting several days for an appointment might be unacceptable. In addition, delays in care might provide more opportunities for transmission of STDs.

Many patients reported cost as a reason (main or next most important) for selecting the STD clinic, and an even larger proportion reported cost among those who were uninsured. In the United States, 23% of men and 19% of women aged 18 to 64 years were uninsured in 2012.[21] Compared with these national rates, we found that about half of both men and women were uninsured among those who used STD clinics. Although the ACA will increase health insurance coverage, it is estimated that many persons will remain without health insurance even with the ACA.[12] In addition, more than half of STD patients with private insurance, and a quarter of those with government insurance, indicated that they would not be willing to use their insurance to pay for their STD care at the clinic. This is an

important finding as STD clinics consider alternative financing of their clinical services, including billing third party payers, such as government and commercial insurance.[9,22,23] It also underscores the important role of the STD clinic, not only as a safety net for sexual and reproductive health care, but also as a venue where confidential services can be obtained.

Adolescents have high rates of STDs, especially chlamydia and gonorrhea.[1,4] Among STD clinic patients in our study, only 8.4% were aged 19 years or younger. The small percentage of adolescents who used STD clinics, despite high rates of STD morbidity in this population, might be the result of several reasons. If a clinic's operating hours overlapped with the school day, it would be difficult for students to seek care in that STD clinic. In addition, the lack of transportation to the STD clinic might be a barrier for many adolescents. Some students might have had access to 1 of approximately 1000 school-based health centers that serve adolescents,[24,25] although not all of these centers provide sexual and reproductive health services for their students.[25] Some adolescents, especially females, might have used STD services in family planning clinics where STD services are available in addition to contraceptive services.[26] Further assessment is needed to better understand STD health care access for young persons in the communities in which our study was conducted.

Strengths and Limitations

The primary strengths of our study were that we surveyed a large number of males and females in STD clinics that were located in cities with the highest burdens of STDs in the United States, and that our survey had high response rates at all 21 sites. Our study also had some limitations. The convenience sample of patients included in our survey might not be representative of persons who used care in STD clinics in other communities not included in our study or in communities with less STD morbidity. We were unable to assess characteristics of transgender men and women who used STD clinics because of the small sample size in our study. Because the survey was administered in a written format and self-administered, potential respondents who were unable to read or who spoke a language other than English or Spanish were excluded. We conducted our survey over a 4-month period in late 2013, and STD clinic use might have seasonal variation in some communities[27,28]; therefore, our findings might not be representative of patients who used care at other times of the year. Like all surveys, the patient responses were subject to recall bias that could result in an over- or underestimation of a measured parameter.

Conclusions

As we consider the future role of the STD clinic as part of the US health care system, local jurisdictions might want to determine whether other existing health care settings could provide the same quality of expert, timely care as STD clinics in their area. Also, it is important to note that our survey found that patients selected STD clinics for their sexual health care even when they had access to other types of health care venues. We also found that sexual health expertise, availability of same-day, walk in appointments, and provision of low-cost care were key reasons for seeking sexual health services at STD clinics. The unique role of the STD clinic in the US health care safety net might be difficult to replicate in other settings. Considerations for providers of sexual and reproductive health care would include almost unlimited walk-in appointments for both established and new patients; providers with a high level of knowledge, expertise, and experience in the diagnosis and treatment of all STDs, including ones such as syphilis that are uncommon in the general patient population; and being able to provide same-day services at low or no cost to patients who are uninsured or unwilling to use their health insurance for STD care. In some jurisdictions, it might be challenging for alternate health care venues to fulfill all the requirements necessary for provision of quality sexual health care for at-risk populations. ■

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Contributors

K. W. Hoover conceptualized and designed the study, designed and conducted analyses, and prepared the article. B. W. Parsell designed and conducted the study, and approved the final article. J. S. Leichliter conceptualized and designed the study, and approved the final article. M. A. Habel conceptualized and designed the study, and approved the final article. G. Tao designed and conducted analyses, and approved the final article. W. S. Pearson designed and conducted analyses, and approved the final article. T. L. Gift conceptualized and designed the study, and approved the final article.

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Note. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention (CDC).

Human Participant Protection

The study protocol, survey instrument, waiver of written consent, and waiver of parental permission for adolescents aged 13 to 17 years were approved by an institutional review board of the Centers for Disease Control and Prevention and the institutional review board of the National Opinion Research Center of the University of Chicago.

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